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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/091,394	03/07/2002	Atsushi Yokouchi	Q68888	9620
65565	7590	01/17/2007		
SUGHRUE-265550			EXAMINER	
2100 PENNSYLVANIA AVE. NW			MCAVOY, ELLEN M	
WASHINGTON, DC 20037-3213				
			ART UNIT	PAPER NUMBER
			1764	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/17/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/091,394	YOKOUCHI ET AL.	
	Examiner	Art Unit	
	Ellen M. McAvoy	1764	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 October 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 18-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 18-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 March 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☒ Certified copies of the priority documents have been received in Application No. 09/254,172.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicants' submissions filed on 19 July 2006 and 19 October 2006 have been entered.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 18-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yokouchi et al (JP-A-9-169989) in view of Heimann et al (6,010,984).

Applicants' arguments filed 19 July 2006 and 19 October 2006 have been fully considered but they are not persuasive. As previously set forth, Yokouchi et al ["Yokouchi"], which is the priority document of U.S. Patent No. 5,840,666, teach a rolling bearing which may be used in electrical parts and auxiliary engine equipment for automobiles having sealed therein a grease composition comprising a base oil, a urea thickener, and an inorganic filler having an

average particle size of not greater than 2 micrometers. See column 3, lines 15-19, of the US patent. The inorganic filler includes metal oxides (e.g., SiO_2 , Al_2O_3 , MgO , TiO_2 and ZnO), metal nitrides, metal carbides, clay minerals, diamond, and solid lubricants such as MoS_2 , graphite, BN, and WS_2 . The inorganic filler is preferably used in an amount of 0.05 to 15% by weight. See column 4, lines 21-23. The base oil preferably has a kinetic viscosity of 10 to 400 mm^2/sec , particularly 20 to 250 mm^2/sec , especially 40 to 150 mm^2/sec at 40°C . See column 5, lines 53-60. The grease composition can further contain one or more additives in a total amount of up to 20% by weight as set forth in column 6, lines 35-39. Suitable additives include amine antioxidants and dithiophosphate compounds which act as extreme pressure agents and as antioxidants. While Yokouchi teaches the addition of further additives, Yokouchi differs from the instant claims in not teaching the addition of a pH adjustor, but the prior art does teach the addition of amine compounds which act as pH adjustors in applicants' claimed invention.

Heimann et al ["Heimann"] teach lubricant and grease compositions which impart corrosion and microbial resistance, and a high dropping point as set forth in column 2, lines 12-15. The pH of the grease can be tailored to be compatible with the metal surface which is contacted with the grease or gel. See column 5, lines 59-60. The pH adjustor of Heimann is an alkali silicate such as sodium silicate. The grease will typically have a pH that ranges from about 7 to about 14 as set forth in column 6, lines 2-3. The addition of conventional additives is taught in column 8, lines 5+.

The examiner maintains the position that a person having ordinary skill in the art, armed with the disclosure of Heimann, would have found it obvious to add a pH adjustor to the grease

composition of Yokouchi in order to adjust the pH to “about 7 to about 14” and tailor the grease to be compatible with the metal surface which is contacted with the grease with a reasonable expectation of enhancing the corrosion resistance of said composition.

In the remarks filed 19 July 2006, applicants argue:

Heimann et al. is not combinable with Yokouchi et al. The present claims are directed to rolling bearings, but such application is neither disclosed nor referenced in Heimann et al. For example, at column 2, Heimann discloses that his inventive grease/gel is used in environments where improved corrosion resistance is desired, for example, wire rope and strand used in a wide range of applications including automotive and marine end-uses (see col. 2 lines 39-43). On the other hand, like the present invention, the Yokouchi et al. primary reference is directly related to a rolling bearing. There is no discussion in Yokouchi et al of using the rolling bearing in a marine environment or environment where improved corrosion resistance is needed. Thus, there is no motivation to add a pH adjustor of Heimann to the rolling bearing of Yokouchi because Yokouchi et al does not call for protection from corrosive environments. (Remarks, page 7).

This is not deemed to be persuasive because Yokouchi specifically teach that “grease for use in rolling bearings for automobiles has been required to have a long lubrication life, to hardly leak, and to have excellent low-temperature performance, anti-corrosion performance, and acoustic properties.” See column 1, line 66 to column 2, line 2. Accordingly, it would have been obvious to one having ordinary skill in the art to add a pH adjustor as taught by Heimann to the grease composition of Yokouchi in order to adjust the pH to “about 7 to about 14” and tailor the grease to be compatible with the metal surface which is contacted with the grease with a reasonable expectation of enhancing the corrosion resistance of said composition.

Applicants also argue

Heimann describes an extensive list of additives, but does not describe or discuss particles comprising an inorganic compound having an average particle size of 2

um or smaller as claimed. This is because one of ordinary skill would expect such particles to impair the corrosion resistance of the grease/gel of Heimann. This is just another reason why one skilled in the art would not add a pH adjustor of Heimann to the grease composition of Yokouchi. Thus, Yokouchi and Heimann are not properly combined against the present inventions Claims 1 and 11. (Remarks, page 7).

This is not deemed to be persuasive because the rejection of record is not predicated upon adding the inorganic compounds of Yokouchi to the composition of Heimann as argued. Applicants' argument also completely ignores the fact that Heimann, like Yokouchi teach that the grease composition may contain "powdered extreme pressure agents" having "an appropriate limit on the maximum particle size" (column 4, lines 5-9 of Heimann et al.).

Applicants argue "Heimann and Yokouchi do not disclose the specific reaction film forming agents now required by Claim 9." (Remarks, pages 7-8).

Notwithstanding applicants' argument to the contrary, Yokouchi and Heimann teach the addition of other additives, including, *inter alia*, the claimed film forming additives (See Yokouchi, column 6, lines 35-49; Heimann, column 3, line 52 to column 4, line 5).

Claim Rejections - 35 USC § 103

Claims 18-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Naka et al (5,728,659) in view of Heimann et al (6,010,984) and Yokouchi et al (JP-A-9-169989).

Applicants' arguments filed 19 July 2006 and 19 October 2006 have been fully considered but they are not persuasive. As previously set forth, on page 1 of the specification, under the heading Technical Field, applicants disclose:

This invention relates to a rolling bearing and particularly a rolling bearing which is used under such a condition that water may seep in the lubricant or the bearing is affected by high temperature, high-speed rotation or vibrations and is suitable to electric parts and accessories of an automobile engine such as an alternator. (Emphasis added).

Column 1, lines 5-20 of Naka et al.["Naka"] teach

The present invention relates to a grease composition for rolling bearings. More particularly, it relates to a grease composition employed for rolling bearings in electrical components and accessory devices for automotive vehicles, such as alternators, electromagnetic clutches for car air conditions, idle pulleys, electric fan motors, or the like. (Emphasis added).

Naka teaches a grease composition for a rolling bearing comprising 10 to 60 parts by weight of a mixture of diurea compounds as a thickener based on 100 parts by weight of a base oil. See column 2, lines 13-44. The base oil used in the grease is not particularly limited, and any oil used as a base oil for a lubricating oil may be used as set forth in column 5, lines 9-11. Base oils having a kinematic viscosity of preferably 40 to 400 mm²/s, more preferably 60 to 250 mm²/s, most preferably 80 to 150 mm²/s at 40°C is preferred. See column 5, lines 11-18. The grease composition may optionally contain publicly known additives in order to further improve its properties as set forth in column 7, lines 31-33. These additives may be used alone or as a combination of two or more kinds. Suitable additives include metal soaps, amine antioxidants and dithiophosphate compounds which act as extreme pressure agents and antioxidants. The amount of the additives to be added is not particularly limited, but usually not more than 20% by weight of the grease composition as set forth in column 7, lines 42-47. Naka differs from the instant claims in not teaching the addition of a pH adjustor and inorganic particles having an average particle size of 2 micrometers or less.

Heimann et al ["Heimann"] and Yokouchi et al ["Yokouchi"] are relied on as outlined above. The examiner maintains the position that it would have been obvious to one having ordinary skill in the art at the time the invention was made to add a pH adjustor as taught by Heimann to the grease composition of Naka in order to adjust the pH to "about 7 to about 14" and tailor the grease to be compatible with the metal surface which is contacted with the grease with a reasonable expectation of enhancing the corrosion resistance of said composition. Additionally, it would have been obvious to add an inorganic filler as taught by Yokouchi in order to reinforce the gel structure and film-forming properties of the grease composition.

Conclusion

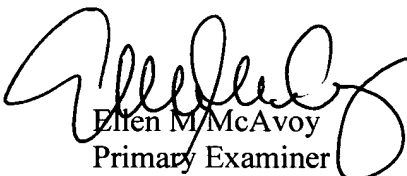
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ellen M. McAvoy whose telephone number is (571) 272-1451. The examiner can normally be reached on M-F (7:30-5:00) with alt. Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (571) 272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR

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Ellen M. McAvoy
Primary Examiner
Art Unit 1764

EMcAvoy
January 2, 2007